

Completing a Cause-of-Death Statement: Basic Concepts

Coroner/Medical Examiner Referrals

- Deaths known or suspected of having been caused by injury or poisoning should be reported to the medical examiner or coroner, and you will complete the death certificate if the medical examiner or coroner doesn't accept the case.

General

- Cause-of-death information should be your best medical opinion.
- List only one condition per line on boxes 50A-D.
- Avoid abbreviations and parentheses.
- Provide the best estimate of the interval between the presumed onset of each condition and death. The terms "approximately" or "unknown" may be used. Do not leave the interval blank; if unknown, indicate that it is unknown.
- If additional medical information or autopsy findings become available that would change the cause of death originally reported, the original death certificate should be amended by the certifying physician by filing an affidavit of correction.
- Report each disease, abnormality, injury, or poisoning that you believe adversely affected the decedent. A condition can be listed as "probable" even if it has not been definitively diagnosed.

Order and Place of Entry

- Each condition in Box 50A-D should cause the one above it.
- A specific underlying cause-of-death should be reported as the final entry in Box 50 so there is no ambiguity about the etiology of this cause. A complete sequence should be reported in Box 50 that explains why the patient died. The sequence may be an etiological or pathological sequence as well as a sequence in which an earlier condition is believed to have prepared the way for a subsequent cause by damage to tissues or impairment of function.

- No entry is necessary on lines (B), (C), and (D) if a single cause of death reported on line (A) describes completely the train of events resulting in death.
- Conditions or diseases in Box 51 should contribute to death but not result in the last entry in Box 50.
- If two or more possible sequences resulted in death, report the one that in your opinion, most directly caused death in Box 50. Report the other conditions or diseases in Box 51.

Additional Information Needed for Some Causes

- Mechanistic terminal events such as respiratory arrest, asystole, cardiac arrest, cardio-respiratory arrest, ventricular fibrillation, atrial fibrillation, and electromechanical dissociation should not be the only condition included in the cause-of-death statement and are unlikely to be the underlying cause.
- Always report an etiology for organ system failure such as congestive heart failure, hepatic failure, renal failure, or respiratory failure on the lines beneath it.
- A primary site and/or histological type should be specified for neoplasms, or specify that site and type are unknown.

Alcohol Use, Tobacco Use, Pregnancy

- If, in your opinion, the use of alcohol, tobacco, other substance by the decedent, or a recent pregnancy or injury caused or contributed to death, then this condition should be reported.

Injuries

- For deaths resulting from injuries, always report the fatal injury event, the trauma, and the impairment of function.
- Injury items (Boxes 54-60) should have some sort of entry if the manner (Box 54) has been reported as accident, homicide, or suicide.

Common Problems in Death Certification

ELDERLY: The elderly decedent should have a clear and distinct etiological sequence for cause of death, if possible. Terms such as senescence, infirmity, old age, and advanced age have little value for public health or medical research. Age is recorded elsewhere on the certificate. When a number of conditions resulted in death, you should choose the single sequence that, in your opinion, best describes the process leading to death, and place any other pertinent conditions in Box 51. If, after careful consideration, you cannot determine a sequence that ends in death, then enter "unspecified natural causes" in Box 50 (e.g., a 102 year old female who was frail but in reasonably good health and who died quietly in her sleep).

INFANTS: The infant decedent should have a clear and distinct etiological sequence for cause of death. If possible, "Prematurity" should not be entered without explaining the etiology of prematurity. Maternal conditions may have initiated or affected the sequence that resulted in infant death, and such maternal causes should be reported in addition to the infant causes on the infant's death certificate (e.g., Hyaline membrane disease due to prematurity, 29 weeks due to placental abruption due to blunt trauma to mother's abdomen).

SURGERY/PROCEDURES: When surgery, procedure, or medication use is reported, also report the condition that necessitated the treatment.

Avoid Ambiguity

For each of the following, report additional information about the etiology whenever possible. If you cannot determine the etiology of a process, then qualify it as unknown, undetermined, probable, presumed, or unspecified etiology to show that a distinct etiology was not inadvertently omitted.

Abdominal hemorrhage	Carcinogenesis	Disseminated intravascular coagulopathy	Hypotension	Pulmonary embolism
Abcess	Carcinomatosis	Dysrhythmia	Immunosuppression	Pulmonary insufficiency
Acute myocardial infarction	Cardiac arrest	End-stage liver disease	Increased intracranial pressure	Renal failure
Adhesions	Cardiac dysrhythmia	End-stage renal disease	Intracranial hemorrhage	Seizures
Adult respiratory distress syndrome	Cardiomyopathy	Epidural hematoma	Malnutrition	Sepsis
Altered mental status	Cellulitis	Exsanguination	Metabolic encephalopathy	Septic shock
Anemia	Cerebral edema	Failure to thrive	Multi-organ failure	Shock
Anoxia	Cerebrovascular accident	Fracture	Multi-system organ failure	Subdural hematoma
Anoxic encephalopathy	Cerebellar tonsillar herniation	Gangrene	Myocardial infarction	Subarachnoid hemorrhage
Arrhythmia	Chronic bedridden state	Gastrointestinal hemorrhage	Necrotizing soft-tissue infection	Thrombocytopenia
Ascites	Cirrhosis	Heart failure	Open (or closed) head injury	Uncal herniation
Aspiration	Coagulopathy	Hemothorax	Pancytopenia	Urinary tract infection
Atrial fibrillation	Compression fracture	Hepatic failure	Paralysis	Ventricular fibrillation
Bacteremia	Congestive heart failure	Hepatitis	Perforated gallbladder	Ventricular tachycardia
Bedridden	Convulsions	Hepatorenal syndrome	Peritonitis	Volume depletion
Biliary obstruction	Decubiti	Hyperglycemia	Pleural effusions	
Bowel obstruction	Dehydration	Hyperkalemia	Pneumonia	
Brain injury	Dementia (when not otherwise specified)	Hyponatremia	Pulmonary edema	
Brain stem herniation	Diarrhea			

For More Information

- Center for Health Statistics, Washington Department of Health, Physician's Handbook on Birth, Fetal Death and Death Registration. Call (360) 236-4300 to obtain a free copy.
- Tutorial from the National Association of Medical Examiners: <http://www.thename.org/CauseDeath/main.htm>
- National Center for Health Statistics, instructions for completing cause-of-death sections of death certificates: <http://www.cdc.gov/nchs/about/major/dvs/handbk.htm>

ALERT – More cause-of-death information needed on death certificates for use with ICD-10

Natural Causes

Cardiac Arrest

- Cardiac arrest is considered a mode of dying and should not be reported as the only cause
- Include additional information about the etiology of the arrest

Cirrhosis of the Liver

- Specify the etiology of the cirrhosis (e.g. hepatitis (specify type), alcoholism, malignancy, etc.)

Dementia

- Specify the type or etiology of the dementia (e.g. Alzheimer's, multi-infarct, alcoholic, etc.)

Failure of an Organ or System (e.g. congestive heart failure, liver failure) or Septicemia

- Include additional information about the etiology of the failure or septicemia

Hemorrhage of Any Site

- Include additional information about the etiology of the hemorrhage
- If the hemorrhage was caused by an external event, fill in boxes 54-60

Leukemia

- Specify the type of Leukemia (e.g., lymphoid, myeloid, acute or chronic)

Malnutrition

- Include additional information about the etiology of the malnutrition
- Include information that makes it clear whether the malnutrition was due to a disease process or an intent not to eat

Multiple Organ Failure

- Choose a single sequence to describe the process leading to death
- List the other conditions in Box 51
- Specify which systems are involved

Natural Causes

- If a descriptive sequence of causes of death cannot be determined despite careful consideration of all information available and circumstances of death, you may report "unspecified natural causes"
- If any potentially lethal medical conditions are known but cannot be cited as part of the sequence leading to death, they should be listed in Box 51

Neoplasms

- Specify which neoplasms are primary site(s) and which are secondary site(s)
- If the primary site is unknown, state "unknown primary"
- Specify whether or not tumors or neoplasms are malignant
- Specify the histologic type, if known
- When using terms such as metastatic or metastases, add the word "to" or "from"
- Be specific about the site, part, or lobe of an organ affected

Old Age, Senility

- Include a clear and distinct etiological sequence for cause of death
- Since age is reported on the certificate, terms like senescence, infirmity, and old age do not represent etiology

Why is Cause-of-Death Information Important?

Cause-of-death data is important for public health surveillance, medical research, design of interventions, and funding decisions for research and development. Information from the death certificate is used by state and local health jurisdictions, university researchers, non-profit organizations, private foundations, other state agencies, and the federal government for health assessment, disease and injury prevention, health promotion, population estimates and child death review activities. The death certificate system provides the basis for case control studies and other epidemiological work that is essential to improving public health.

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Injuries and Poisonings

Information for Boxes 50-51

Adverse Reaction to Prescribed Medication

- Specify what condition necessitated the treatment

Surgeries and Procedures

- Specify what condition necessitated the treatment

Inhalation, Asphyxia, Aspiration

- If the aspiration was due to a disease or condition, specify the condition. If not, fill in box #54-60
- Specify if aspiration involved food, foreign body, mucus, or blood
- If mucus was involved, specify if the mucus entered into bronchioles, bronchus, larynx, lung, nasal sinus, nostril, pharynx, respiratory tract, throat, or trachea

Information for Box 57

Aircraft Accident

- Specify the type of aircraft (helicopter, ultralight, private fixed-wing, commercial fixed-wing, spacecraft, balloon, hang-glider, etc.)

Drowning

- If a boat was involved, specify the type of boat (merchant ship, passenger ship, fishing boat, sailboat, canoe, kayak, inflatable craft, water-skis, etc.)
- Specify if the drowning occurred while in a bath-tub or swimming-pool or following a fall into a bath-tub or swimming pool, or occurred while in natural water

Fall

- State how the fall occurred
- Specify if the fall involved a bed or other furniture, stairs, ladder, wheelchair, ice, snow, ice-skates, roller-skates, skateboards, playground equipment, etc.
- Specify if the fall occurred while being carried or supported by other person(s)
- If none of the above apply, specify if the fall occur on the same level or involved a trip (or slip) and fall

Fire

- Specify the origin of the fire (stove, blowlamp, candle, match, torch, fireplace, etc.)
- If the fire was caused by an explosion, specify the agent (aerosol, gasoline, bomb, etc.)
- Specify whether the fire was located in a private dwelling, other building or structure, or other location (e.g., stationary vehicle, forest, etc.)
- If the fire ignited another object or material, specify (e.g., explosive material (specific type), clothing, etc.)

Gun-related Deaths

- Specify the type of weapon (rifle, shotgun, handgun, etc.)

Neglect or Abandonment or Maltreatment

- Specify if the maltreatment was by a spouse or partner, parent, acquaintance, official authorities, etc.)

Poisoning or Drug Overdose

- Specify the type or name of the drug(s) or medication(s) or other substance(s). If unknown, state "unknown drugs"

Traffic Accident

- Specify the status of the decedent (driver, passenger, occupant, pedestrian, bicyclist, or person outside of the vehicle (e.g., hanging on outside or on roof))
- Specify the type of vehicle (automobile, motorcycle, 3-wheeled motor vehicle for on-road use, van, pick-up truck, heavy transport vehicle, bus, all-terrain vehicle designed for off-road use, bicycle, train, streetcar, animal, etc.)
- Specify the location at the time of the accident (on highway, off highway, driveway, stationary, railway yard, railroad track, etc.)
- Specify if a collision occurred
- If a collision occurred, specify the object(s) or type(s) of vehicle involved